RIVERS AND FLOODS

By RICHMOND T. ZOCH

[River and Flood Division, Montrose W. Hayes, in charge]

Three minor floods occurred in the United States during October, as shown in the accompanying table. No damage was caused by the overflows in the Santee and Rio Grande and only slight damage by that in the Sulphur.

Table of flood stages in October 1933

[All dates are in October]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	*Feet*			*Feet*	
Santee: Rimini, S.C.	12	4	9	13.5	6
		12	14	12.4	14

Table of flood stages in October, 1933—Continued

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM					
Red Basin					
Sulphur: Ringo Crossing, Tex.	20	16	17	23.2	17
WEST GULF OF MEXICO DRAINAGE					
Rio Grande:					
Mercedes, Tex.	20	4	8	21.2	6–7
		17	17	20.1	17
Brownsville, Tex.	18	5	8	18.2	5–8

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

[The Marine Division, W. F. McDonald, in charge]

NORTH ATLANTIC OCEAN

By WILLIS E. HURD

Atmospheric pressure.—Pressure, as a rule, averaged from normal to slightly below in middle and lower latitudes of the North Atlantic during October 1933, as indicated by table 1, with the point of greatest departure, −0.13 inch, occurring at Horta, Azores. As frequently happens, during months of depression of the Atlantic anticyclone, the Icelandic LOW became less intense, with the consequence that the gradient existing between the two areas, in terms of average monthly extremes of pressure, was comparatively small. This month the average pressure at Reykjavik, Iceland, was 0.13 inch above normal, and the average difference in pressure between Reykjavik and Horta was only 0.17 inch. In October 1932 the corresponding difference was 0.67 inch. The highest corrected barometer reading from a ship at sea during October 1933 was 30.54 inches, occurring on the 22d, near 41° N., 67° W., and on the 28th, near 51° N., 31° W. The lowest corrected reading was 28.49 inches, occurring on the 7th, in 42°17′ N., 65°56′ W. A reading of 28.30 inches, but uncorrected, was made on the 6th, in 29°50′ N., 74°50′ W. Both low readings were in connection with the hurricane of October 1–9.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, October 1933*

Station	Average pressure	Departure	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Julianehaab, Greenland	29.90		30.48	25	29.32	16
Reykjavik, Iceland	29.81	+0.13	30.72	25	28.99	13
Lerwick, Shetland Islands	29.82	+.03	30.44	2	28.86	11
Valencia, Ireland	29.95	+.04	30.48	26	29.25	9
Lisbon, Portugal	30.01	−.01	30.23	30	29.62	22
Madeira	29.95	−.04	30.17	13	29.68	27
Horta, Azores	29.98	−.13	30.32	20	29.63	26
Halifax, Nova Scotia	30.04	.00	30.52	22	28.88	8
Nantucket	30.07	+.02	30.61	21	29.38	7
Hatteras	30.06	.00	30.44	21	29.66	6
Bermuda	30.00	−.07	30.28	20, 21	29.54	7
Turks Island	29.88	−.07	30.02	20	29.72	5
Key West	29.87	−.07	30.08	20	29.09	5
New Orleans	30.02	−.01	30.26	10	29.76	5
Cape Gracias, Nicaragua	29.81	−.01	29.98	12	29.62	2

NOTE.—All data based on a.m. observations only, with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

Extratropical cyclones and gales.—The northern steamer routes during the first 7 days of October were practically free of extratropical cyclones, and no gales were reported from this source during the entire period. On the 8th, however, cyclonic conditions overspread the entire northern part of the eastern half of the ocean, and by the 9th and 10th gales of force 8–9 were reported between the 35th meridian and the British Isles, and scattered gales of force 8 between the Azores and the coasts of Spain and France. On the 11th and 12th the principal gale field, with forces of 8, lay north of 50° N. and west of 40° W.

From the 12th to 22d anticyclones largely dominated most extratropical waters south of the 50th parallel, except for moderate intrusions from cyclones centered far to the northward. The principal storm period within these dates was that of the 14th to 17th, during which gales of force 8–10 were reported from near the 55th parallel, between 25° and 45° W.

From about the 18th to 23d a moderate cyclone hovered about the Iberian Peninsula and caused fresh gales (force 8) in the vicinity on the 21st to 23d.

On October 22 a cyclone center gathered near 50° N., 35° W. Owing to interposing high pressure north and east, it was forced to retrograde slowly into lower latitudes until the 27th, when it lay a short distance south of the Azores, afterward spreading in area and disintegrating. Local gales of force 8–9 attended its movements from the 24th to 26th, with the maximum force occurring on the 24th, in 46° N., 37° W. The lowest pressure indicated was 29.42 inches, also on the 24th.

The weather at the close of the month was unsettled over most of the ocean, but with no storm conditions of severity prevailing.

Tropical cyclones.—During the last few days of September 1933 unsettled conditions overspread the lower waters of the Caribbean Sea, where they continued until October 1. On that date a shallow cyclone center was definitely established with a northward movement. During the 2d and 3d the depression advanced almost due north midway between Jamaica and Swan Island. On the morning of the 3d a south gale of force 8 was reported at Negril Point, barometer 29.56 inches, and off the north coast of Cuba, immediately west of Habana, a northeast gale of force 9 was blowing. By night of the 3d the storm